GEELONG NATURALIST

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COMING EVENTS

AUGUST			
3	General Meeting	Members Night	
8	Biodiversity Group Excursion	Bingley Swamp	
10	Plant Group Meeting		Vascular Systems
11	Biodiversity Group	Workshop Meeting	
21/22	Boneseed Pull	You Yangs	Rob Beardsley 5241 1951
15	Excursion	Brisbane Ranges	
		Ted Errey Walk	Leaders: Dick Southcombe, Roy Whiteside
17	Bird Group Meeting	Merilyn Grey	"The Noisy Miner – a Problem Bird"
SEPTEMBER			
7	General Meeting		"The Work of Trust for Nature"
12	Biodiversity Group Excursion		
14	Plant Group		Orchids
15	Biodiversity Group	Workshop Meeting	
15-19	VFNCA Campout	Mildura	
19	Excursion	You Yangs	Leaders: Trevor Pescott, Ray Baverstock
21	Bird Group	Trevor Pescott	"A Year at Forrest"

* CHANGES TO PROGRAM
\+ ADDITIONS TO PROGRAM

BONESEED ERADICATION

. . . By Rob Beardsley

You Yangs
Saturday 21st & Sunday 22nd August

Dedication by many GFNC members over two decades has seen the Saddle area of the You Yangs State Park become the best example yet of all attempts to rid the Park of this invader. Due to the area now cleared and the few members prepared to 'pitch in' our rate has been reduced to that of maintenance i.e. keeping cleared areas clear of regrowth.

Although a daunting task the end result is one of natural beauty returned to one of Geelong's most significant remnant bushland areas. Lets give the 'too hard basket' a miss this year! Light duty pulling assured.

To gain entry to the park report at the Ranger's office where you can also obtain directions to the location of our work site if you are unsure or have not attended before.

Contact Rob. Beardsley 5241 1951

Time: Saturday 21st 9.30, Sunday 22nd 10.00 (or when you get there)

Where: The Saddle. Follow Great Circle Drive anticlockwise and watch for sign/s. Gate to work area will be closed but unlocked, please close after entry. Work area will be signed GFNC.

Bring: Hat, warm/wet gear, eye protection, gloves, lunch and a friend.

Remember: Our second effort for 1999 will be the 23rd and 24th October 1999. Please try and make one of these dates.

□

TED ERREY NATURE CIRCUIT

. . . Dick Southcombe

During our investigations for this circuit we became aware that works by Barwon Water in the Stony Creek Reservoir area may

1. have an adverse effect on streams flowing through delightful fern gullies which obviously should be featured on our interpretive signs and
2. result in land long held by Barwon Water becoming available for an extension to the National Park.

We have written to Mr Brockenshire, Chief Executive Barwon Water asking him to meet with us to explain the works, its effect on stream flows, the future of the reservoir and the future of the surrounding land. These issues are extremely important as far as this section of the National Park is concerned and we urge as many people as possible to attend.

Meeting details will be advised when known

□

New members . . .

We are pleased to welcome

Ms Lynne Barrington
Ms Donna Burns
Mr Stephen Campbell
Mr Bernie Franke
Mrs Stephanie Geddes
Mr Michael Kidman
Ms Chris Murphy
Mr Barry Thornton

who joined the club recently.

EXCURSION NOTICE

. . . Roy Whiteside

Ted Errey Nature Circuit Project, Brisbane Ranges.

Date: Sunday August 15

Leaders:
Dick Southcombe (5243 3916)
Roy Whiteside

Ted Errey was a prominent member of this club over many years and as an amateur botanist carried out extensive plant surveys in the Brisbane Ranges. His records were used to compile the LCC's Melbourne area report and the National Parks plant list. We are hoping for a really good attendance at this excursion so that a number of small groups with an interest in all aspects of natural history can concentrate on particular sections of the circuit. Ironbarks, Acacias, Grevillias, Hakeas and Correas are attracting many birds and echidnas are obviously busy.

Please assemble at Karingal to arrange transport and depart at 9am. sharp for the Ballan Rd./ Clarkes Rd. intersection (on west side of Ballan Road) which is about 1.5 km. beyond the Staughton Vale Rd. turn off. The day's programme will be explained and maps distributed between 9.30 and 9.45 am. The information gathered will enable us to determine what features will be incorporated on signs to be placed along the circuit.

□

PLANT GROUP MEETING

. . . Dick Southcombe

Dave King will give an illustrated talk on a "Plants Vascular System"; please bring pieces of soft stem plants for examination.

Also, bring specimens of early spring flowers and your observations of 'what's flowering in the bush'

□

OUT AND ABOUT WITH VALDA

. . . Valda Dedman

Remnant Red Gums, Geelong's original trees, an Old Giant, Restoring Belmont Common, Local Oaks, And...

I investigated the Dryden Estate, a small stand of remnant red gums along the road linking the Hamilton Highway and the Midland Highway. The area has been fenced by the Fyansford-Stonehaven Landcare Group. It will be interesting to watch the seedlings grow. Having kept the rabbits out, what will be done about the grassland plants beneath the trees? A study of the Altona grasslands found that fire was an essential management tool.

These last bits of our original vegetation are so important. It is difficult to get a true picture of what was here when white settlement began. I have been deciphering the notes made by Surveyor Smythe on his 1838 map of the land adjoining the town of Geelong. Each Section and portion of the section was described using distance and bearing from a nearby tree, whose species is given. So we know that there were gum, oak, box, blackwood, black wattle, banksia and cherry growing around West Geelong, Newtown, Chilwell and Belmont. It was probably a lightly wooded area.

If you plot them in more detail you find that Blackwoods and box grew where I live in Highton. Now, what did Smythe mean by "box"? It could even have meant *Bursaria spinosa*, for "Native Box" is one of its common names. Banksias (probably *B. marginata*), grew between Noble Street and Aberdeen Street and along Roslyn Road. Black Wattles are mentioned for the Belmont escarpment area and Cherry Ballarts *Exocarpus cupressiformis* were south of Aberdeen Street. Sheoaks were scattered throughout the area and especially to the north

The exact species of gum can only be guessed, but those along the river were probably Red Gums *Eucalyptus camaldulensis* and perhaps some Manna Gums *E. viminalis* elsewhere. The Oaks could have been Drooping Sheoaks *Allocasuarina verticillata*. An 1853 drawing of Geelong and Corio Bay by F. Thomas shows a sheoak-like tree on the cliffs to the east of the town.

Early paintings and photos are also a source of information about what was, and also how we mistreated our inheritance. Trees were cut down for fuel and building purposes with scant regard for the consequences. There is a horrific photo, taken about 1875, of the Barwon at Moorabool Street, with almost denuded banks and dead trees. In 1912 it looks almost as bad. Just thirty years from white settlement the river flat at Queen's Park had more dead trees than live ones and all the big ones were gone.

Some old red gum giants still hide away in paddocks. We recently found a magnificent specimen at Teesdale. (see photo). We fetched a tape and measured it. The trunk was seven and a half metres in circumference. How many centuries had it taken to reach that size? It saddens me to read that some of these are being cut down and sold as firewood.

When such a tree is felled not only do we lose part of our heritage, but a whole ecosystem is destroyed. Large old trees are home to galahs, honeyeaters and pardalotes, possums and sugar gliders, bats and antechinus. A myriad of spiders, beetles and other invertebrates live on the leaves or under the bark, or share the ground litter with skinks and other small creatures.

One of my dreams is to restore the Belmont Common to some of its former glory and have trails through a recreated floodplain environment. I would like to see a red gum forest, fields of yam daisies and bluebells, tea tree thickets in wet spots.

Because the Common was taken out of the town plans so early, we do not have details of survey notes, although the map is marked, twice, with the word "Reserve". Some obvious remnants are there -- the lignum, great bindweed, mud dock, water plantain, nardoo. A couple of very old and not very healthy red gums still survive on Belmont Island, at the edge of the road.

Back to the Oaks. I have finally lashed out and bought *Flora of Victoria*, vol 3, which spells them Buloke and Sheoak. There are a lot more species of these 'cassowary trees' than I suspected, but I'm eager to learn.

Thanks to Rohan Bugg I have visited one of the few remaining local stands of Buloke *Allocasuarina luehmannii*, with its wonderful colony of Buloke mistletoe, *Amyema linophyllum*.

Can anyone point me in the direction of *A. media* or *A. misera*? Both occur in the Geelong region and the latter right in the heart of the city, according to the maps. Perhaps Surveyor Smythe used one as a survey point.

A. media is "probably a well-established and self-producing hybrid between *A. littoralis* and *A. paradoxa*". It is smooth-barked and its branchlets have glabrous furrows, male spikes often moniliform (resembling a string of beads) and cones on generally shorter peduncles (stalks) than *A. littoralis*. ***A. misera*** grows in heath or open woodland in sandy soil, often near-coastal and flowers most of the year.

There, the book has paid for itself already!

And...August is the month when my magpies start calling in the middle of the night, and not only when the moon is full. They don't carol, just repeat short phrases, over and over and over. Do your's do the same? The days start to lengthen by minutes instead of seconds. Latham's Snipe should have left Lake Utanai on cold Hokkaido and be fattening at Shiokawa Tidal flat ready to join us in late August. Will Dennis be the first to see them? At Angahook Nodding Greenhoods start to carpet the ground near the carpark. Watch out for the Swamp Wallaby along the Stan Lewis Walk.

□

PRESIDENT'S REPORT
. . . Barry Lingham

August 1999

The month of July heralds the submission of grants for many projects that may affect the GFNC. There is a trend towards many areas of government allocating money to community groups based upon the groups committing time and expertise to a project. Current grant projects that the GFNC has the potential to become involved with include:

- Interpretive signs for the Ted Errey Nature Circuit. (Parks Victoria Grant)
- Signs indicating significant salt marsh habitat used by Orange-bellied Parrots (Threatened Species Network Grant)
- Publication of a book detailing the life of the naturalist Charles Barret (Victorian Federation Grant)
- Support for the Friends of Brisbane Ranges production of a book on the history and natural history of the Ranges (Vic Federation Grant)

Dick Southcombe and the working party who are managing the development of the Ted Errey Circuit Walk have been consulting with the Parks Victoria rangers from Anakie who are responsible for the signage in the National Park. The committee received a detailed report on the recommended sites and general format of the thirteen signs that would be erected around the circuit. Producing these signs is a very expensive exercise. It will cost over $7,000 to draft the text and images for the signs and then a similar amount to have the signs constructed.

Concern has been raised by Dick about the future of the Barwon Water land surrounding the Lower Stony Creek dam and the aqueduct that flows from the Upper Stony Creek dams to the Anakie Basin. It appears that discussions are being held between Barwon Water and Parks Victoria over the possible transfer of some or all of this land to the National Park. A representative from Barwon Water has been invited to meet with the GFNC and other environmental organisations to give details of the future of this land. Sections of this land contain habitat that has had very little impact from the human activity that has been detrimental to large sections of the National Park. There is also a concern that the decommissioning of the aqueduct may cause major environmental changes in the Stony Creek catchment as the aqueduct has been steadily leaking for decades, giving permanent water to the catchment.

The Environmental Expo Review was held at City Hall on Tuesday 27th June. Comments from those present produced an extensive list of positive items and those things needing improving. A meeting will be held in the near future to confirm the days and dates for this event in the year 2000. Bruce Humphries passed on a sincere thank you to all those who assisted in the Expo.

We have signed the new three year lease for the Jerringot wetland, so we can now make more definite management plans for this marvellous habitat. Although we have not been able to incorporate the small dams on the golf course where the Baillon's Crake breed, we are continuing discussions and hope to convince the council of the need to protect this area.

An item of concern is the plan to develop some 76 hectares of land south of the Ocean Grove Nature Reserve for low density housing. Whilst this has been part of the Structure Plan for many years, this proposal has a narrow 20 metre buffer zone between the OGNR and the housing, where the original zoning allowed for up to 100 metres. One of the best stands of the Bellarine Yellow Gum also exists in this area, but a mere 2 hectares has been set aside to preserve these trees. A better plan would incorporate an area of about 10 hectares that abutted the OGNR. We will oppose the current proposal.

On a positive note, I would like to warmly welcome Bernie Franke as our newest member of the committee.

Bernie attended our July meeting, and despite the meeting having a late finish, he decided that he would like to become involved. It is terrific to see one of our younger members becoming a committee member.

Perhaps there are other members who would like to find out more about the committee or the GFNC sub groups. Please see me for more information.

□

STOP PRESS
. . . Valda Dedman

The Snipe are on their way back to Geelong. They were seen at Shiokawa Tidalflat on 14 July, when they were feeding in a rice field. Other waders present were Grey-tailed Tattler, Wood Sandpiper and Long-toed Stint.

My email friend Eriko Fujioka went to Hokkaido, where Latham's Snipe breed, in June and watched them displaying and flying around a grassy field. The males were very bold.

It is now the rainy season at Shiokawa and the hot season will follow.

PS **Snipefest 99** will probably be held on **14 September**, in the last week of school term.

We will be asking for volunteers again, to help with the children's activities.

It is actually great fun!

□

BIRD GROUP REPORT
. . . Barry Lingham

July 20th 1999

Marilyn Hewish has presented many interesting talks to the Bird Group over the years and this evening's presentation was no exception.

Marilyn spoke of her recent visit to Thailand in April 1999. The trip involved an intensive program related to Marilyn's work as a microbiologist. Marilyn was part of a team that received a government grant to help teach a group of students about viral research. The project was based at a university on the outskirts of Bangkok.

The facilities at the university were very good and the grounds included many gardens and a wetland area. However the demands of the project meant that Marilyn was constantly working with the students or dining out with members of the project.

This left little time for Marilyn to pursue her interest in the local birds, but even based at this location she managed to observe about 50 local species.

Some of the species noted are also present in Australia. The Common Koel has a distinctive call that can be heard over much of the East Coast of Australia, but it was one of the first birds heard at Marilyn's residence. Although her room was located several stories above ground level, she was able to use this to advantage when noting the fast moving swifts that circled the building. Swifts were also common near the ornate temples in the city.

The House Swift was common and could be identified by the white front and rump, square tail and small size. The Pacific Swift was also a regular visitor. Swallow species seen included the Barn and the Red-rumped.

In the central wetland, the beautiful Chinese Heron could be seen hunting along the waters edge. A larger species frequenting the wetland was the Purple Heron.

Seed eaters included the Eurasian Tree Sparrow (common in Bangkok but unusual in Geelong) and the Scaly-breasted Munia (a finch like bird).

The Common Mynah is indigenous to this area, as is the Spotted Turtle Dove. Both these birds have been introduced to Australia and are increasing their populations in developed areas.

An aggressive bird with a long tail and a scruffy appearance was the Plain Prinia. The Great Reed Warbler was seen amongst the vegetation at the water's edge. The Coppersmith Barbet is part of a family of 72 species occurring in tropical forests around the world.

The Scarlet Flowerpecker is related to our Mistletoebird. Three species of Bulbul noted were the Streak-eared, the Red-whiskered and the Sooty-headed. Tiny birds lurking in tree foliage proved to be Common Ioras.

Marilyn described the plumage of the Purple-naped Sunbirds as "stunning", a compliment they shared with the Rollers who also had colourful plumage.

Many species of drongos were noted including the Black, Ashy and Greater Racquet-tailed named after the long tail feathers with bulbous ends.

The palm trees were the habitat preferred by the tiny Palm Swift that flew about at high speed making identification difficult. The brilliant yellow plumage with a black eye band made the Black-naped Oriole much easier to identify.

On the water were Little Grebe (different to the Australian bird), Moorhens (the same as ours), Lesser Whistling Duck and the pure black Little Cormorants. White-breasted Waterhens moved nervously along the margins of the wetlands.

Other species noted were White-vented Mynahs, the cheeky black and white Oriental Magpie-Robins, Long-billed Crows and the weird looking Open-billed Stork.

Overall, this was an impressive observation list for someone who was on a high pressure working assignment in a major city. Marilyn found the "Guide to the Birds of Thailand" a useful reference, plus a photographic publication written in Thai, but giving details of the preferred habitat and rarity of the birds.

Once again we have been privileged to be able to hear Marilyn pass on some of her extensive knowledge of bird life.

Next Month's Speaker

Merilyn Grey will discuss recent research into the effects of Noisy Miners on other birds and the flora in the areas they inhabit. The talk is entitled "The Noisy Miner - a Problem Bird"

Nest Box News

Many of the nest boxes constructed by Barwon Water have been erected at the site of the Bannockburn Treatment Complex. A total of 70 boxes will be installed shortly.

If you are available to assist in monitoring these boxes, please contact Barry Lingham (phone 5255 4291). It will take about 3 hours to complete a survey of the boxes to establish if breeding is taking place.

The GFNC will receive payment from Barwon Water for the monitoring work. □

EXCURSION REPORT

. . . Valda Dedman

Whalewatching Warrnambool and Ralph Illidge Sanctuary, 18 July 1999

The 15 people who braved the cold weather and made the long journey to Warrnambool were rewarded by excellent sightings of a Southern Right Whale at Logan's Beach.

The whale swam along the surface of the water for the whole length of the beach and spouted frequently. There may have been two whales, a mother and a calf close together.

At the Hopkins River estuary a pair of Oystercatchers and a Singing Honeyeater took pride of place. The Hopkins is very attractive and merits further exploration.

At Ralph Illidge Sanctuary Yellow Robins and White-browed Scrub Wren almost shared our lunch. On our walk through the bush we admired dozens of different mosses, lichens and fungi, but saw few birds.

Young Jonathon Lingham was ahead and saw three Potoroos, but the rest of us had to be content with a Grey Kangaroo out in the adjoining open paddock. However, just to wander through this patch of bush was a reward itself. We are grateful to the late Ralph Illidge and the present Friends of Bimbimbi for saving and caring for this bushland remnant.

Along the way we kept an eye open for birds and thank Heather for keeping the Birds from the Bus list Thanks also to drivers Barry and Alison, who made life so much easier for the rest.

Do not let all people say,
And say it to your shame,
That all around was beauty here
Until the time you came.

— from the Ralph Illidge Sanctuary brochure.

BIRDS FROM THE BUS

Australian Wood Duck
Black Swan
Australian Shelduck
Pacific Black Duck
Australasian Grebe
Australian Pelican
Little Pied Cormorant
White-necked Heron
White-faced Heron
Cattle Egret
Straw-necked Ibis
Australian White Ibis
Black-shouldered Kite
Whistling Kite
Brown Falcon
Nankeen Kestrel
Eurasian Coot
Pied Oystercatcher
Masked Lapwing
Silver Gull
Spotted Turtle-dove
Feral Pigeon
Galah
Long-billed Corella
Sulphur-crested Cockatoo
Eastern Rosella
Superb Fairy-wren
Yellow-rumped Thornbill
Red Wattlebird
Noisy Miner
Singing Honeyeater
New Holland Honeyeater
Willie Wagtail
Grey Butcherbird
Magpie-lark
Australian Magpie
Little Raven
Common Skylark
House Sparrow
Welcome Swallow
Common Blackbird
Bassian Thrush
Common Starling
(43 species)

RALPH ILLIDGE SANCTUARY

Crimson Rosella
White-throated Treecreeper
Superb Fairy-wren
White-browed Scrubwren
Striated Thornbill
Eastern Yellow Robin
Golden Whistler
Grey Shrike-thrush
Grey Fantail

□

PLANT GROUP REPORT

. . . Joe Hubbard

Hands around a warming 'cuppa' as a winter sunset painted the estuary pink and grey was a great way to reflect upon a nature ramble through the Breamlea wetlands and sand dunes.

We were fortunate to have a couple of the locals who led us to those treats which remain hidden from the casual walker and his dog.

Among those treats were puffball-like fungi, growing just above the high tide mark and further back into the dunes tiny, exquisite, waxy-looking, flat-capped fungi. And there was winter colour too! The purple of the Coast Swainson-pea, only one plant flowering but the promise of a brilliant spring display, the white of the Coast Beard-heath, some still with edible white fruit, a Coast Saltbush with reddish-purple male flowers set against the silvery grey leaves, the alien but useful Beach Rocket and the climbing Bower Spinach with its four-petalled yellow flowers.

Too close to the walking track, but looking much better than their name suggests, were some healthy looking specimens of the regionally significant Thickhead Glasswort *Sarcornia blackiana*. Here too was the Southern Sea Heath showing some of its small pink flowers. Later in the year it will be at its best.

The Coast Sword-sedge was eye-catching with its green, stiff sword-like leaves and flowering stem topped with a cluster of brown spiky fruit.

A brisk onshore wind discouraged birds and watchers but a Caspian Tern was noted inland over the river.

And to those locals, Kathleen Ralston and Susan Howells - what a lovely spot you have and thankyou for sharing it with us.

□

A FUNGUS BEETLE, *CARPOPHILUS HEMIPTERUS*, (CUCUJOIDEA:NITIDULIDAE)

by Dave King

Unit 216/86 Church Street, Grovedale, 3216

Introduction

At a recent U3A class conducted by Valda Dedman, one of her students, Doreen Smith, exhibited a fungus collected from a Red Gum tree. It was White Punk, *Piptoporus portentasus*, a large spongy bracket fungi. From out of this fungus emerged several beetles and grubs, which were collected and passed to the writer for identification.

This fungus was collected at Edenhope, Victoria, 37° 02' S 141° 18' E.

Description

The beetle was determined to be *Carpophilus hemipterus*, meaning 'destroying with enjoyment and half winged' - a very small beetle, about 3 mm overall length. The family Nitidulidae comprises of all small beetles. It is prognathous, that is the mandibles are placed forward in the head and in this case they cannot be seen from above due to the extended clypeus.

Most prominent are the 11 segmented antennae. The scape is swollen and the diminutive segments intermediate with the pronounced club of three segments. This is typical of the superfamily Cucujoidea. The superfamily contains about one-tenth of the known species of beetle (Britton, 1970).

C. hemipterus is medium brown, covered in short hairs. The elytra is striate and truncated to reveal the two posterior segments of the abdomen, Fig. 1. Legs are short and stout, the lateral margin of the fore tibia is distinctly serrate. Tarsi 5-5-5 segmented, the three basal segments are dilated, the fourth extremely small, fifth elongated with a pair of simple claws. All segments of the legs are relatively hirsute. The grubs emerging from the fungus were found to be the larva of *C. hemipterus*.

Eruciform, cream coloured and distinguished by two pairs of pointed urogomphi on the dorsum of the posterior abdominal segment, Fig. 2. The function of the urogomphi is uncertain, the literature does not reveal any information regarding this. Each of the thoracic segments has a pair of legs terminating in a simple claw. The head bears six ocelli on each side. The tracheal system supplying oxygen to the larva is manifest in the spiracles positioned laterally on the abdominal segments.

References

Britton, E. B. (1970), in The Insects of Australia, Melbourne University Press, Melb.

Chapman, R. F. (1975), The Insects - Structure & function, The English University Press, London.

Fig. 1 Carpophilus hemipterus, Nitidulidae

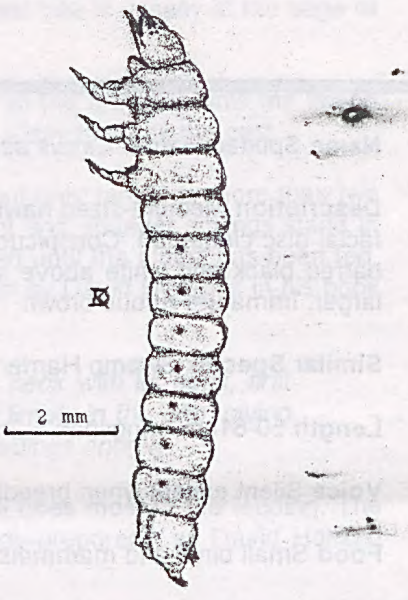

Fig. 2. Carpophilus hemipterus, larva.

GLUEPOT RESERVE VOLUNTEER RANGERS

There is a unique opportunity to become involved in the operation and establishment of this important community-run conservation reserve and to experience a very special environment.

Birds Australia Gluepot Reserve is looking for expressions of interest from people who would like to become Volunteer Rangers at the reserve, 64 km north of Waikerie in SA's Riverland District.

Volunteer Rangers are required to undertake a small number of key maintenance tasks and a variety of optional jobs. Couples are welcome to apply. The position is booked to the end of 1999 due to strong demand, but expressions of interest for 2000 onwards will be most welcome. Ideally, Rangers should be prepared to stay for two months or more and preference will be given to those who are comfortable in the bush, able to communicate with the public and have a strong natural history interest - opportunities are available to assist on research programs. Accommodation is provided as well as a food allowance and a 4WD for use on Reserve business.

If you are interested, please obtain details from Duncan MacKenzie, 4 Edinburgh Avenue, Stoneyfell, SA, 5066. Phone: (08) 8332 1204 FAX: (08) 8364 5527. E-mail: dmackenzie@iname.com.

Applicants need to supply details of relevant experience, time of availability and a referee's phone number

Further information on the Gluepot Reserve may be obtained by reading Betty Moore's 'Library Notes' on page 10.

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BIRD OF THE MONTH
SPOTTED HARRIER

by Valda Dedman

69 North Valley Road, Highton, 3216

Name Spotted Harrier *Circus assimilis*

Description Medium-sized hawk blue-grey above, underparts cinnamon spotted white. Crown, nape and owl-like facial disc cinnamon. Conspicuous black primaries, forming open fingers in flight. Wings long. Tail long, broadly barred black and white above and below. Long golden yellow legs, sometimes dangle below in flight. Female larger. Immature rufous-brown.

Similar Species Swamp Harrier

Length 50-61cm, wingspan 1.2m.

Voice Silent except when breeding., when *ki-ki-ki-ki* in excitement or defence. *kitter-kitter-kitter* in courtship.

Food Small birds and mammals, especially rabbits, pipits, quail.

Habitat Open plains, arid areas, wheat and cereal crops with some residual timber.

Range Australia wide, but less common near the coast in the south. Vagrant Tasmania. Migratory and perhaps nomadic.

Geelong Werribee, Bacchus Marsh, Lara, Stonehaven, Inverleigh, Rokewood, Pt Henry

Nest Flattish stick platform, lined with green leaves, in outer leafy part of tree, sometimes on mistletoe.

****

The Spotted Harrier is an elegant bird of great distinction. Its specific name *assimilis* means 'similar', but this harrier constantly expresses its own individuality — in its nesting sites, its gliding pattern and hunting strategy, sexual fidelity, yet disregard for elaborate courting rituals, its solitary roosting habits and its beautiful colouration.

Charles Belcher thought/hoped he had seen one in October 1913 at Ceres. That was where I saw my first Spotted Harrier. I was excited because my initial glimpse of the large blue-grey bird bouncing up and down in the luxuriant grass reminded me of a brolga. The Spotted Harrier was just as spectacular as any dancing brolga as it hunted rabbits in the late afternoon sun. My only other encounter with a Spotted Harrier was in late June of this year , west of Shelford, when I watched one systematically hunting back and forth along the native grassland road reserve or sitting quietly on a fence post and preening before resuming its hunting transects.

Belcher came to the conclusion that it was not a Geelong bird:

> *"It is with regret I must add that we may rule it off the list of birds which there is a reasonable chance of meeting in our district".*

However, as our Geelong Bird Reports show, we now do have a reasonable chance of seeing a Spotted Harrier, most years, over the summer months, from late October until February and again in late autumn and early winter, from April until June. Nearly all our records are from the grasslands to the north and west of Geelong, but one is from Freshwater Creek and one from the Moolap salt pans, where the bird was under attack from ravens, magpies and mudlarks. One was shot some ninety years ago in the samphire marshes near Point Henry, according to Mr Mulder, Geelong's resident taxidermist at the time.

The absence of sightings during July, August and September may be an indication that nesting takes place outside the Geelong region. There is one intriguing possible breeding record from 1977. In October of that year Roger Wileman found a nest near Rokewood in a tall pine tree where he had seen a Spotted Harrier disappear carrying a stick. The three eggs did not hatch, but harriers were seen near by on several occasions. 1978 was a good year for Spotted Harriers in Victoria, so maybe breeding was more widespread than usual. Breeding can be opportunistic according to food supply.

(Continued on page 9)

(Continued from page 8)

The Spotted Harrier is the only tree-nesting harrier in the world. The nest is rarely higher than 12 metres even when taller trees are available, and may be only 2 metres from the ground. The nest tree is usually at the edge of a shelter belt bordering open ground.

The nest is big enough only to accommodate the body of the female who does all the brooding until the young are large enough to be left. Fresh green leaves are brought in daily several times a day to reline the nest.

Egg laying is usually from August to October. Three to four white eggs are laid but only rarely do more than two young birds fledge successfully. The first to hatch becomes completely dominant and younger siblings stand in the nest with heads bowed in an obsequious manner and even lie down as if dead until the eldest has been fed. The firstborn may go so far as to try to kill the youngest as is graphically described by David Hollands in his book "Eagles hawks and falcons of Australia":

> *This tactic involved standing over the chick and seizing the back of the neck with its beak, first holding it down and then picking it up and shaking. The tiny chick hung limply in the grip, giving continuous shrill, weak cries, while the other two young ignored the proceedings entirely.*

The adults bring in rabbits and small birds to the chicks, but it is the female who does most of the feeding. The male may even pass the food over to her outside the nest. The food is "ready-prepared", as David Holland recounts:

> *It was a quail, ready to be fed to the young and prepared with a skill which would have done credit to any poulterer. It was decapitated, plucked and had been disembowelled through the cloaca without any external damage to the flesh. So thorough was the plucking that only an occasional feather remained to give a clue as to the bird's identity.*

Spotted Harriers are monogamous and closely bonded, although they do not go through an elaborate courtship ritual. At most there is a slight formal bowing by the male, an aerial food passing and only an occasional undulating display.

They are supreme hunters, a joy to watch. The facial disc aids prey location, which is through sound as much as sight. Because they hunt low they must have lightning-quick reactions when prey is seen.

There is method to the hunting: a low, slow, work upwind followed by a quick return before starting the next work from a slightly different spot. The glide may appear leisurely but the final attack is sudden, quick and deadly as the harrier drops straight to the ground or sometimes hurls itself sideways and down or even right round and back on its tracks to drive deadly talon into the exposed quarry.

Although Spotted Harriers are occasionally seen over marsh lands or saltworks, there is little reason to confuse them with Swamp Harriers. Both have the low gliding flight characteristic of harriers, but the Spotted's flight is much slower and appears much more buoyant. Its hunting flight is a long unbroken glide whereas the Swamp Harrier's is usually several flaps followed by a glide

The Swamp Harrier's wings taper more than those of the Spotted, its primaries fingers are not as long nor as strikingly black and are in fact barred.

Above all, the Spotted Harrier is a bird of the drier areas, wide open plains, supremely a mallee bird.

David Hollands sums up their lifestyle:

> *Wind! It affects every part of these birds' lives. They live on plains that are by nature windy. They are hatched in the wind, they are reared in the wind. They hunt in the most open and windy places, their very buoyancy working against them when the wind becomes too strong, like a yacht with too much sail up in a storm. Many nests must be lost and that any young survive to fly at all seems a miracle.*

How glad I am that the miracle happens and we have the chance to enjoy these remarkable birds.

□

LIBRARY NOTES

. . . Betty Moore

All the magazines and newsletters mentioned, plus many others, are in the library and available on loan to members.

Australia NATURE Winter 1999 - "Raising Boobies" by Myriam Preker looks into the habits of both Masked and Brown Boobies inhabiting a remote cay of the Great Barrier Reef and the nesting and tribulations encountered by both nesting adults and their offspring.

"Worms to make the earth move" by Steve van Dyke - this article, lightened with much humour, is all about earth worms. It even gives a recipe for a 'heart stopping' worm omelette!

"Dreaming about fibres" by Tim Low, discusses Australian fibre plants which the aborigines made use of for such things as nets, bags and fishing lines. Colonial entrepreneurs experimented with many of these plants in the making of rope, paper and sailcloth.

Other articles feature such things as Giant Squids, Velvet Geckoes, Tree Kangaroos and the Ice Ages.

Wingspan June 1999 - Amidst many interesting articles on Kookaburras, Kakapo (New Zealand's most threatened birds) and Native Woodlands, there is one by Rohan Clarke on the Gluepot Reserve, Birds Australia's first reserve. The property (51,300 ha) protects part of the largest intact block of mallee vegetation remaining in Australia and was purchased by Birds Australia in 1997. The bird population includes at least six nationally threatened species. Ten diverse plant communities have been identified, many of the mallee trees are hundreds of years old. The property had been grazed extensively by sheep, and the author, not having seen the reserve for several months, found the transformation by regrowth of native vegetation staggering.

Contact phone numbers are given for anyone wishing to camp in the reserve.

The Victorian Naturalist - June 1999 contains interesting notes, reports and contributions. If you really want to test your knowledge, look at the front cover and see if you can identify the really odd, bizarre looking insect shown there before reading about it on the inside cover.

Habitat - June 1999 has an informative article on various aspects of genetic engineering, a subject in which we are all facing personal involvement in the very near future.

□

CORANGAMITE REGIONAL VEGETATION PLAN

. . . Valda Dedman

This plan is being prepared by the Corangamite Catchment Management Authority and "will be the document that provides strategic direction and actions to be implemented over the next 5 years".

It will be one way in which we can help to preserve native vegetation and maintain biodiversity and members from the Geelong Field Naturalists Club will have input into it. I will be participating in a workshop conducted by CCMA on 9 August and would welcome members' ideas about what should be in the strategy and how we can make it work.

Giant Redgum at Teesdale
photo Valda Dedman

Report of talk on "LICHENS" given by lichenologist Dr. Kathleen Ralston at the General meeting on 6 July 1999.

. . . Roy Whiteside

There are some 20,000 different species of lichen in the world with Australia having about 2500 species of which about 1000 types are endemic. Lichens occur in a wide range of habitats including the polar regions and high altitudes where few other living organisms are able to survive.

Lichens can be divided into three types:

1. CRUSTOSE: crust-like structures.
2. FOLIOSE: leafy structures.
3. FRUTICOSE: upright branching structures resembling miniature bushes.

Baron Von Mueller first collected lichens at Sealers Cove, Wilson Promontory in 1853.

A lichen comprises a FUNGUS and an ALGA in a symbiotic relationship. The fungal part is situated on top of the algal part (either blue-green or green) with the whole structure anchored to a substrate. Lichens need a substrate which is stable but not smooth (e.g. they can even grow on well-weathered beer bottles and old car bodies). Lichens are not parasitic as all nutrients are taken from the air. They need light and water in order to grow, remain dormant in dry weather and can withstand extreme temperatures. However they do not like being wet and hot at the same time (eg. there are few lichen species in the Kimberley region). Lichens are susceptible to air pollution (eg. they are small in a city area and their growth is poor near a smelter like the one at Portland). They grow well on roof tiles if pollution is low.

REPRODUCTION occurs

1 From SPORES produced in the mushroom-shaped fruiting bodies which are of various shapes (eg. GRAPHIS, looking like writing). Spores are contained in a reproductive structure known as an ASCUS. In order to develop into a lichen a spore needs to meet the appropriate type of alga.

2 VEGETATIVELY.
   (a) from fragments of lichen
   (b) from structures known as SOREDIA which fall off onto rocks etc. and grow directly into new lichens as they contain both fungal and algal components.
   (c) Tiny outgrowths of a lichen thallus known as ISIDIA can also grow into new lichens. Lichens are prolific in coastal regions and some excellent examples occur close to Geelong, (eg. at Breamlea where up to six different species can occur on the same twig). They occur in different colours (eg. XANPHORIA, an orange-coloured species which occurs in many parts of the world). Identification of lichen species is thus mainly achieved by noting colour, shape and details of spore structure.

Dr. Ralston gave examples of some of the localities where she had studied lichens which included:

Wilson's Promontory where they grow on mangroves (eg Miller's Landing). There is a dark variety containing blue-green algae and many other varieties.

In the claypans of Hattah Lakes there is a ground species known as *Diploschistes* which covers areas the size of small dinner plates.

In the Pink Lakes of the Sunset Country there is a variety known as *Chondropsis* semiviridis which opens up after rain but lies curled up when dry.

In the Bogong High Plains there is *Rhizocarpon geographicum* which grows on rocks and which is also found in Antarctic regions.

Lichens are a protected species. If, however, specimens are collected for research purposes it is suggested that small samples can be collected on twigs or lifted off soil with a penknife. Lichens on rocks should be removed by chipping off a small amount of the rock with a cold chisel. After drying in air they can be stored in a packet with details of location and date.

CONSERVATION. Survival of lichens depends on avoiding

1. Habitat destruction
2. Fire
3. High air pollution.

The talk was well illustrated by 35 mm. slides, overhead projector transparencies and labelled lichen specimens on display at the meeting.

Trevor Pescott gave a vote of thanks to the speaker. □

SOILS

by Bernie Franke

61 Reigate Road, Highton, 3216.

If you think that soil is just stuff that keeps plants from falling over then you're pretty much right. But soil is also much more than that. Soil functions as a filter for air and water, a storage for water, a medium for plant growth and an ecosystem in itself. If you are into ecosystems then finding out about what is under your feet can assist in exploring different environments. Read on and try your hand at judging the texture of your soil.

What is Soil?

Soil is the mantle of unconsolidated material that overlays the earth (which is mostly a rock). Soil is made up of mineral particles, organic matter (humus), air, water, and living organisms. Sand, silt and clay comprise the mineral fraction of the soil and each has a specific particle size (sand 2 mm to 200 micron, silt 200 micron to 2 micron and clay < 2 micron). The texture of the soil is determined by the relative proportion of sand, silt and clay present. A loam for example contains approximately equal proportions of sand, silt and clay. Chemical fertility (cation exchange capacity) is basically related to the amount of clay a soil contains and to a lessor extent to the amount of soil organic matter. From a food production perspective, loams (especially clay loams) are generally desired because they can retain the most plant available water as well as retaining a reasonable amount of nutrients.

Soil Formation

Soil forms from the physical and chemical weathering of rock. Factors that influence soil formation include climate, organisms, relief, parent material and time (or CLORPT).

Climate - wet and warm (tropical latitudes) equals a faster rate of rock weathering

Organisms - plant material decays and produces humic and fulvic acids that help to weather rock. Earthworms, other soil biota, burrowing animals and human activity all influence the rate of soil formation.

Relief - Altitude and aspect create specific conditions for soil formation (ie south facing slope may be cooler and wetter due to less evapotranspiration). Relief also influences erosion and deposition.

Parent Material - What is the underlying geology? (Igneous, metamorphic, or sedimentary rock?) Did the soil weather in situ or was it transported? (ie alluvial plains)

Time - Soil formation is a very slow process (ie only a millimetre or two over a century and much less than this in most of Australia). Soil is therefore considered a non-renewable resource.

Australian Soils

In a word, Australian soils are 'crap' - if you will pardon the expression! This may come as a surprise to many ("with golden soils and wealth for toil") yet the fact is that we are an impoverished nation when it comes to the soil resource. As the "oldest, driest and flattest continent" most of our soils are physically and chemically in their declining years. The reasonable soils that we do have are small in area and often limited by inadequate or too much moisture and/or climatic extremes. For instance winter waterlogging plagues the young and fertile Basalt Plains to our immediate west.

The good news is that our impoverished soils, extreme climate and extended isolation, as a landmass is the reason for our unique flora and fauna. With a high degree of endemism, Australia has been classified as one of the 'megadiverse' nations. Perhaps surprisingly, biodiversity seems to be linked to poverty and what we would often consider to be low productivity systems. For example both the Great Barrier Reef and heathlands have extraordinary diversity. The reef has warm, low oxygen and low nutrient water and the heathland soils are a physical and chemical disaster.

A note on Aboriginal land (soil) management. We can probably thank these first settlers of the country for their part in shaping the flora and flora that we have today. When Cookie sailed up the east coast in 1770 he saw half the country burning and he witnessed fire management at close quarters at what is now Cooktown. He thought that the "Indians" were a pack of firebugs! Firestick farming as a management tool is likely to have degraded the already poor soil resource. Fire destroys organic matter that may otherwise end up as humus (humus = good soil structure and water and nutrient capacity) and fire also destroys ground cover, the primary protective mechanism against soil erosion. If the Aborigines were in "harmony with the land" they probable only reached that point of

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equilibrium after a prolonged period of impact (ie extinctions) on this land. European presence has brought another period of impact with perhaps the difference being that our technology can make things happen a great deal faster.

Soils Are Great Mate!

Time to get those hands dirty. Get out in the backyard and try your hand at determining the texture of your soil.

1. Take a sample of soil sufficient to fit comfortably into the palm of the hand.
2. Moisten the soil with water (use distilled water if you have it), a little at a time, and work the water into the soil. Remove all coarse material such as roots or gravel greater than 2 mm diameter. Add water until the soil reaches a consistency where further water added would cause the soil to stick to the hands.
3. Knead and moisten the soil until there is no further change in the soil ball. One to ten minutes may be needed depending on the material - a dry clay soil may take considerable working to break down to fine aggregates. Usually one to two minutes is all that is needed.
4. The behaviour of the soil bolus during manipulation and its response to pressing out between the thumb and forefinger indicate the soil texture. Attempt to make a ribbon by using your thumb to squeeze the ball over the side of your first finger. This is best learned by demonstration but is rather like the 'rubbing in method' for the scone makers out there! Estimate the length of the ribbon you can get.

Field Texture

Sand - coherence nil to very slight (will not form a ball properly); cannot be moulded; single sand grains adhere to the fingers. No ribbon able to be formed (< 5% clay)

Clayey sand - Slight coherence; sticky when wet; many sand grains stick to fingers; will form minimal ribbon of 5-15 mm. Discolours fingers with clay stain (5-10 % clay)

Sandy Loam - Bolus just coherent but very sandy to touch; sand grains dominantly medium size and easily visible (10 - 20 % clay)

Loam - Bolus coherent and rather spongy; smooth feel when manipulated but with no obvious silkiness or sandiness; may be somewhat greasy to touch if high in organic matter; will form ribbon of about 25 mm (about 25% clay).

Sandy clay loam - more strongly coherent bolus; sand grains visible in finer matrix; will form ribbon of 25-40mm (20-30% clay)

Clay loam - coherent plastic bolus; will form ribbon of 40-50 mm (30-35% clay).

Silty clay loam - same as clay loam but has silky feel (silt > 25%)

Light clay - plastic bolus; slight resistance to ribboning shear between thumb and forefinger; will form ribbon of 50-75 mm (35-40% clay)

Medium clay - smooth plastic bolus; handles like plasticine; can be moulded into rods without fracture; moderate resistance to ribboning; will form ribbon of 75 mm or more (45-55% clay).

Heavy clay - smooth plastic bolus; handles like stiff plasticine; can be moulded into rods without fracture; firm resistance to ribboning and will form ribbon of 75 mm or more (>50% clay).

Influences on soil texture

Clay = stickiness, cohesion, plasticity.
Silt = smoothness, silkiness
Organic matter = cohesion of sands, greasiness of clays.

So there you have it - soil helps to determine what grows where and what lives where. An agricultural slogan used in the 1930's probably sums it up. "All the money in all the banks comes from the soil". Perhaps we should add - "many things that you can't buy come from the soil as well". □

BIODIVERSITY NOTES

. . .Dennis Greenwell

On Sunday 11th July, a small handful of us were privileged to visit the home of Ian Davies near Colac, to view his most exquisite collection of Australian and Exotic Butterflies.

We drove up his drive past the "Land For Wildlife" sign and parked in front of the marvellous mud brick house that he had built. We were then invited inside and were greeted by display case after display case of the most diverse types of Butterfly that anyone could ever imagine. We had spent about half an hour 'crooning' over these biological 'jewels,' when Ian suggested that we had better have a look at the main collection. There were a few moments of disbelief, before we realised that Ian wasn't joking and he proceeded to present us with drawer after drawer of even more extraordinary Butterflies from the most far flung recesses of the globe. The range of superlatives at our disposal, had already been exhausted whilst looking at the wall mounted specimens; now, we were reduced to making inarticulate and strictly non-scientific 'Oohing' and 'Aahing' noises! This was particularly the case when the huge *ornithoptera,* with their gigantic wing spans were brought out.

When Ian showed us the South American *morphos* , he explained that the spectacular iridescent blue of the wings was not caused by pigment but by the scattering of light rays on the scales and that the colours changed dramatically, depending on where you were viewing from. To prove the point, he suggested that we walk slowly round the table viewing the specimens from different angles. The variety of colour and apparent change in texture of the wings was quite amazing.

After we had seen the collection, we went out to look at the garden, which contained not only some interesting plants, but some aviaries, which contained mainly Australian parrots with a scattering of exotic species.
We finally took our leave of Ian and his family shortly before twelve and headed back towards Colac for lunch.

Early afternoon saw us heading towards Mt. Porndon and the lava tube cave that we had visited a couple of months previously. This time, the weather was kind and it was very pleasant walking the three quarters of a kilometre or so to the cave.

The main reason for visiting the cave was to see the Bent Winged Bats, but upon entering the cave, all was silent. The reason for this was that this cave was a nursery or summer roost. I had neglected to check on this and the result was that I felt a bit of a fraud bringing all my friends here under 'false pretences.' However after having my leg pulled unmercifully for a short time, we set about finding what we could, to take back for examination at our next meeting. We ended up with a couple of dead bats in various stages of mummification, a few spiders that we thought might be a bit different from those outside the cave environment and a sample of bat droppings from the huge pile that pulsated with life under the spot where the main colony would normally roost.

After collecting our specimens, we walked back to our cars, promising ourselves that we would endeavour to obtain permission to return here again in the warmer months, not only for the bats, but to explore the boulder strewn basalt plains which looked as if they might be the home of a variety of reptiles.

Biodiversity Meeting Report.

Our meeting following the excursion was, as always, both entertaining and informative. We started with Ron Mole giving us a talk on the Wanderer Butterfly *Dannus plexipus.* This stunning insect is a quite recent arrival to this country, having become naturalised only since its food plant, the poisonous milkweed, was established here. There seems to be some contention over exactly when and how they came here. One source suggests that they were deliberately introduced last century and that they died out, only to be re-introduced in the late 1940's. However, Ron assures us that when he was a boy (well before the 1940's) they were very common around Adelaide where he then lived. Other sources claim that they came by 'island-hopping.' Whatever is the real course of their introduction, they obviously didn't come until their food plants were established either as garden plants or as the scrubby weeds that grow wild in many parts of Australia.

Many people have remarked that it is only rarely that the Wanderer is seen in the Geelong region nowadays. I can certainly vouch for the fact that when I first came to Australia in the early eighties, they were a fairly regular sight. The question has to be asked, is this all part of a natural cycle, or could it perhaps be, that with

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the increasingly popular planting of Australian native gardens, that the ornamental Swan Plant, a member of the milkweed family, is now seldom grown? At the risk of upsetting the 'purists' I think it worthwhile to grow a couple of Swan Plants in a sunny corner of the garden, just in case a heavily gravid female happens to be passing. If anyone would like some seeds, just give me a call.

After hearing from Ron, we examined the specimens from the bat cave. The detail of the teeth and claws on the dead bats under the microscope were quite fascinating. The bat droppings too, contrary to popular belief, were far from boring! We were able to identify several types of fly, beetle and mite from just a small sample.

Next Excursion Sunday 8th August.

Meet at the Fyansford Pub at 9.00 a.m. and car pool where possible. We'll then head along the Hamilton Highway. A couple of kilometres past Inverleigh, we turn right onto the Shelford Road. Along here, I'm told that where the road cuts through the basalt and tertiary limestone, there is a good chance of finding some interesting fossils. We'll then move on to Bingley Swamp between Shelford and Rokewood. It is questionable whether or not there will be any water in it, but it sounds as if it could be worth a visit anyway and if the unseasonably mild weather continues, who knows what we may turn up? (It would be advisable to pack gum boots for this trip just in case.)

□

You'll enjoy the cuppa even more if you join Rob Beardsley for some boneseed pulling on August 21/22.

OBSERVATION REPORTS July 1999 -- *compiled by John Bottomley and Barry Lingham*

Observations were submitted by Peter Bright and Ben Bright (PB & BB), Marilyn Hewish (MHe), Rosemary Turner (RT), Craig Morley (CMo), Terry Crockett (TC), Barry Lingham (BL), John Newman (JN), Ray Baverstock (RBa), Rosemary Atkins (RA), Bernie Franke (BF), Valda Dedman (VWD), Joe Hubbard (JH)

Peter Bright has been out and about, seeing a wide range of birds. The most astounding would be the flock of 113 Blue-billed Duck on the Portarlington Sewerage Pond. These ducks are uncommon in the Geelong region. Peter also noted a White-bellied Cuckoo-shrike at Bannockburn. They have not been observed there for a few years. Peter noted a common local bird that is not often recorded - the Stubble Quail. If you learn to identify its "chitchy-wip" call, I am sure we will get a lot more records.

Hospital Lakes continues to be the best spot to see Glossy Ibis and Magpie Geese. Terry Crockett noted small numbers of these birds on the 10th of July.

Marilyn Hewish saw a Yellow-nosed Albatross at Cape Otway We usually get a few reports of these birds each year from those who are patient enough to scan the oceans with a telescope. Marilyn also some White-fronted Terns at Apollo Bay. These birds are uncommon, but how many of us would be able to identify them! Check your field guides and then carefully peruse the next flock of terns you see.

Craig Morley heard a vocal Starling performing an astounding mimicry arrangement where six different species were imitated in an early morning display. With many birds now calling to mark out territories or attract a mate, I wish to challenge people to try and identify the calls of as many species as possible before you get out of bed and present them at the next two meetings (no cheating by staying in bed all morning)

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Stubble Quail	1	27-Jun-99	Swan Bay West. PB
Yellow-nosed Albatross	2	23-Jun-99	Cape Otway. MHe
Australian Pelican	10	24-Jun-99	Point Henry Spit RT
Great Crested Grebe	3	7-Jul-99	Swan Bay West PB
Australasian Grebe	1	10-Jul-99	Barwon River at Merawarp Road Bridge. CMo
Little Pied Cormorant	180	11-Jul-99	Stingaree Bay of Point Henry. Raft of feeding birds. MHe
Magpie Goose	8	10-Jul-99	Hospital Lake TC
Pacific Black Duck	2	9-Jul-99	Jerringot. Mating. BL
Australian Shoveler	20+	18-Jul-99	Lake Modewarre PB
Pink-eared Duck	4	11-Jul-99	Lake Modewarre JN
	10+	18-Jul-99	Lake Modewarre PB
Freckled Duck	1	18-Jul-99	Lake Modewarre PB
Blue-billed Duck	113	9-Jun-99	Portarlington Treatment Plant. Eighty male, thirty-three females. PB
Cattle Egret	20+	19-Jun-99	Highton. Flying South West at 0725. RBa
Glossy Ibis	2	10-Jul-99	Hospital Lake. TC
Royal Spoonbill	100+	Early June	Swan Bay Jetty PB, BB
Brolga	2	24-Jun-99	Reedy Lake. RT
Pied Oystercatcher	1	10-Jul-99	Barwon River at Barwon Heads. RBa
Red-kneed Dotterel	2	11-Jul-99	Lake Modewarre JN
Hooded Plover	4	16-Jul-99	Point Roadknight. Also on 17/6/99 amd 18/6/99 RA
	9	11-Jul-99	Black Rocks. In one flock. Three immatures. MHE
Double-banded Plover	30+	18-Jul-99	Wurdiboluc Resevoir PB
Red-necked Avocet	150	24-Jun-99	Moolap Saltworks. AAHL end RT
Silver Gull	100's	9-Jul-99	Moolap Salt Works. Pairs selecting teritory along breaks in ponds BL
Caspian Tern	6	18-Jul-99	Lake Modewarre. PB
White-fronted Tern	2	24-Jun-99	Apollo Bay. In roost of 300 Crested Terns. MHe
Crested Tern	300	24-Jun-99	Apollo Bay. MHe
Black-shouldered Kite	2	9-Jul-99	Reedy Lake. Female on ground calling to amle in the air who flew down to mate. BL
White-bellied Sea Eagle	1	7-Jul-99	Swan Bay West. PB
Little Eagle	1	10-Jul-99	Barwon River at Merrawarp Road Bridge. CMo
Grey Goshawk	1	4-Jul-99	Barwon Downs. White phase bird. BF
Spotted Harrier	1	25-Jun-99	Hamilton Highway west of Leigh Valley. VWD
Peregrine Falcon	2	25-Jun-99	Cape Otway MHe
Australian Hobby	1	27-May-99	Kardinia Park CMo
	1	3-Jun-99	Eastern Park. CMo
	1	25-Jun-99	Kardinia Park. CMo
Nankeen Kestrel	2	9-Jul-99	Moolap Salt Works. Mating on roof of factory. BL
Yellow-tailed Black-Cockatoo	33	9-Jul-99	Belmont Common. North end. VWD
	90+	4-Jul-99	Belmont. 1220 flying to NE. RP
	60+	15-Jun-99	Between Eastern Park and Moolap Salt Works. MAC
	80+	15-Jun-99	East Geelong Cmo
	150	Early July	Richmond Crescent and Kilgour Street. Flying to Eastern Park. CMo
Gang-gang Cockatoo	3	19-Jul-99	Belmont. VWD
Galah	2	20-Jul-99	Belmont VWD
Blue-winged Parrot	6	7-Jul-99	Swan Bay West PB
Fan-tailed Cuckoo	1	3-Jul-99	Bacchus Marsh. Perched and silent. MHe
	2+	10-Jul-99	Barwon River at Merrawarp Road Bridge CMo
	1	11-Jul-99	Queenscliff primary school. CMo
Horsfield's Bronze Cuckoo	1	9-Jul-99	Moolap Salt Works. CMo
Yellow Thornbill	4+	8-Jul-99	Highton RBa
Yellow-rumped Thornbill	2	11-Jul-99	Limeburners Bay. JH
Crescent Honeyeater	1	4-Jul-99	Brisbane Ranges. Aqueduct Track. MHe
White-fronted Chat	24	24-Jun-99	Point Henry Spit RT
Restless Flycatcher	2	1-Jun-99	You Yangs. JH
Satin Bower Bird	2	23-Jun-99	Gellibrand MHe
	3x1	8-Jul-99	Three sightings: Deans Marsh, Lorne and Airey's Inlet. CMo
White-bellied Cuckoo-Shrike	1	20-Jun-99	Bannockburn PB
Grey Currawong	1	1-Jul-99	Newtown. CMo
Little Raven	2	1-Jun-99	Newtown. Nest buiding until 1/7/99. JH
Silvereye	30+	2-Jul-99	Highton. In elderberry tree. RBa
Song Thrush	1	4-Jul-99	Highton. Heard calling regularly since 12/6/99 RBa
Common Starling	1	7-Jul-99	Newtown. Mimicking White-plumed Honeyeater, Pied Currawong, New Holland Honeyeater, Welcome Swallow, House Sparrow and Blackbird. CMo

□

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AUG	Valerie Lloyd-Jones	Margery Rix Penny Smith	Claire Greenwell Dennis Greenwell
SEP	Sheila Silver	Lily Sherwood Judy Rowe	Ida Benson Michael Benson

Meetings start at 8.00 pm at:
Karingal Community Centre, Corner McKillop and Humble Streets, East Geelong.
Use the Humble Street entrance.

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